

Remarks

The above Amendments and the Remarks provided below are in reply to the Office Action mailed November 14, 2003 in the above-identified patent application.

The fee for addition of claims as well as for the payment of the two-month extension is enclosed herewith.

Claims 1-101 were pending in the Application prior to the outstanding Office Action. Within the Office Action, claims 1-101 were rejected. The Applicants have cancelled claims 1-73 and 83-101 as well as added new claims 102-156. The Applicants have amended 74-82. The Applicants submit that the amendments made to some of the Claims 74-82 are to correct typographical as well as minor errors and constitute style and cosmetic changes. Nonetheless, the Applicants reaffirm their right to pursue broader claims and appeals. Reconsideration of the rejections is respectfully requested.

I. NON-CONSIDERATION OF INFORMATION DISCLOSURE STATEMENT

The Applicants submitted an Information Disclosure Statement along with the appropriate fee on June 6, 2002. The Information Disclosure Statement submitted on June 6, 2002 contained 45 references. On October 8, 2002, the Applicants had filed a Supplemental Informational Disclosure Statement along with the appropriate fee, whereby the Supplemental Information Disclosure Statement included 111 references. Within the Office Action, only the Information Disclosure Statement filed on June 6, 2002 was considered, and the Supplemental Information Disclosure Statement filed on October 8, 2002 was not considered. Therefore, the Applicants respectfully request that the Supplemental Information Disclosure Statement filed on October 8, 2002 be considered. The Applicants have provided a copy of the Supplemental Information Disclosure Statement, as filed on October 8, 2002, for convenience purposes.

II. REJECTION UNDER 35 U.S.C. §103(A)

Within the Office Action, claims 1-101 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,215,558 to Moon (hereinafter referred to as “Moon”). As stated above, the Applicants have cancelled claims 1-73 and 83-101. Therefore, claims 74, 79 and 82 have been rejected under 35 U.S.C. §103 as being an obvious matter of design choice to one skilled in the art for the particular configurations and sizes of the electrodes recited within the claims. The Applicants respectfully disagree.

Moon describes an ion fueled type air cleaner. As shown in Figure 1 in Moon, the ion type air cleaner comprises a plurality of ionizing electrodes 1 as well as opposing dust collecting electrodes 2. The device in Figure 1 also includes several accelerating electrodes 3 placed between the dust collector electrodes 2. An ion field is produced between the ionizing electrode 1 the opposing dust electrodes 2 to cause air to flow from the ionizing electrodes 1 towards the dust electrodes 2, whereby the dust is collected by the dust collector electrodes 2. It is expressly stated in Moon that the accelerating electrodes 3 are charged at the same polarity as the ionizing electrodes 1 and have the opposite polarity of the dust collecting electrodes 2. The accelerating electrodes 3 therefore enhance the ion field between the ionizing electrodes 1 and the dust collecting electrodes 2 such that a sufficient amount of air is able to pass between the ionizing electrode 1 and the dust collecting electrode 2. Since the accelerating electrodes 3 shown in Figure 1 are of the same polarity as the ionizing electrodes 1, the dust particles ionized by the ionizing electrodes 1 are repelled away from the accelerating electrodes 3 and forced toward the dust collecting electrodes 2. This allows the collecting electrodes 2 to collect more ionized particulates. Accordingly, the accelerating electrodes 3 in Moon are required to be positioned alongside the collecting electrodes 2 to sustain the ion-electric field as well as maintain the dust collecting capability of the electrodes 2.

In contrast to the present invention recited in Claim 74, there is no hint, teaching or suggestion in Moon to place the accelerating electrodes 3 downstream and directly in line with the dust collector electrodes 2 to reach the present invention. In fact, Moon teaches away from the notion of configuring the accelerating electrodes 3 downstream and directly in line with the collector electrodes 2, because

the accelerating electrodes 3 have the same polarity as the ionizing electrodes 1. That is to say, the accelerating electrodes 3 in Moon, being the same charge as the emitter electrodes 1, would not perform their function of repelling the charged particulates toward the dust collectors 2 if the accelerating electrodes 3 are placed downstream from the collectors 2. In addition, since the accelerating electrodes 3 have the same polarity of the emitter electrodes 1, the electrodes 3 would further ionize the particles already charged by the emitter electrodes 1, which clearly teaches away from the present invention. Further, placing the accelerating electrodes 3 directly downstream of the collector electrodes could inhibit some of the air flow due to the tendency of the particles charged by the accelerating electrodes to flow back move upstream against the air flow toward the collector electrodes.

The trailing electrode in Claim 74 is downstream and directly in line with the second electrode. Thus, the downstream trailing electrode of the present invention has the advantage of collecting additional oppositely charged particulates not collected by the second electrode. In addition, the downstream trailing electrodes preferably emits negative ions to neutralize the positively charged ions not collected by the second electrode 242. The trailing electrode therefore prevents the positively charged ions from being collected on the outlet surface. Accordingly, one skilled in the art would have no motivation to place the accelerating electrodes 3 in Moon downstream from the collecting electrodes 2 to reach the invention recited in Claim 74. For at least these reasons, amended Independent Claim 74 is patentable over Moon and is therefore in a condition for allowance.

Claims 75-82 are dependent on the independent Claim 74. As stated above, Claims 74 is allowable over the teachings of Moon. Accordingly, Claims 75-82 are also allowable as being dependent upon an allowable base claim.

III. NEW CLAIMS

The Applicants have added new claims 102-156. The Applicant submit that new claims 102-156 are fully supported by the specification and are allowable over the cited references.

In light of the above, it is respectfully submitted that all of the claims now pending in the subject patent application should be allowable, and a Notice of Allowance is requested. The Examiner is respectfully requested to telephone the undersigned to assist in any way in expediting issuance of a patent.

The Commissioner is authorized to charge any underpayment or credit any overpayment to Deposit Account No. 06-1325 for any matter in connection with this response, including any fee for extension of time and additional claims, which may be required.

Respectfully submitted,

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By: S. Bhattacharya
Suvashis Bhattacharya
Reg. No. 46,554

Customer No. 23910

FLIESLER MEYER LLP

Four Embarcadero Center, Fourth Floor

San Francisco, California 94111-4156

Telephone: (415) 362-3800